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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,371	03/17/2004	Ching-Te Tseng	250210-1070	3807

24504 7590 08/18/2008  
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EXAMINER
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HANCE, ROBERT J

ART UNIT	PAPER NUMBER
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2623

MAIL DATE	DELIVERY MODE
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08/18/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/802,371	<b>Applicant(s)</b> TSENG ET AL.	
	<b>Examiner</b> ROBERT HANCE	<b>Art Unit</b> 2623	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 May 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claim 23 recites the limitation "the digitized first image" in line 2. There is insufficient antecedent basis for this limitation in the claim.

### ***Response to Arguments***

1. Applicant's arguments filed 05/08/2008 have been fully considered but they are not persuasive.

**As to claim 1**, in response to applicant's argument on page 14, last paragraph, that Tsuria does not disclose or suggest maintaining the image display quality of a transmitting system during a channel change conversion from a first channel to a second channel, Examiner respectfully disagrees. Tsuria teaches maintaining image display quality by causing an image to be displayed during channel changes, since the delay during channel change "zapping times" is unpleasant to the subscriber (Tsuria col. 1 lines 16-29). These zapping time images, as well as the program signals from the first and second channels, are transmitted from the CATV converter (Fig. 1: 12) to the television (Fig. 1: 14) via cable interface (Fig. 1: 34). Therefore the CATV converter

disclosed by Tsuria is a transmitting system, the display quality is maintained during the channel changes.

In response to applicant's argument on page 15, paragraph 3, that Tsuria does not disclose or suggest sending a channel conversion request to the transmitting system, Examiner respectfully disagrees.

Tsuria discloses sending a channel conversion request to the television receiver (col. 2 lines 9-11), and, as explained above, the television receiver disclosed by Tsuria (Fig. 1: 12) is responsible for transmitting program signals and zapping time images to a television (Fig. 1: 14) via cable interface (Fig. 1: 34), therefore the television receiver is a transmitting system, and channel conversion requests are sent to this transmitting system.

In response to applicant's argument on page 16, paragraph 2, that Tsuria does not disclose (B) controlling the transmitting system to stop transmitting the first image signal and start to transmit a preset image signal; and (C) stopping transmission of the preset image signal, and starting transmission of the second image signal, Examiner respectfully disagrees.

Applicant states that Tsuria discloses that the zapping time information and the programming are transmitted simultaneously. While this is so, it is not the case during channel changes. Zapping time information is sent over the CATV network and is then stored in the subscriber unit, while the programming information is transmitted from the

receiver and displayed on the television (col. 4 lines 35-41). However, **during channel conversion**, the receiver first ceases the display (i.e. ceases transmission to the television) of the first channel, then displays (i.e. transmits to the television) the zapping time information. They are not transmitted simultaneously from the receiver to the television. When the second channel is tuned, the display (transmission to television) of the zapping time information ceases, and the second channel is displayed (transmitted to the television) (col. 4 lines 42-51). The zapping time information and the programming are never transmitted from the receiver to the television simultaneously.

**As to claim 11**, in response to Applicant's arguments on page 18 that Tsuria does not disclose or suggest a transmitting system, comprising: a receiving module for receiving a channel conversion request; a tuner for channel conversion from a first channel to a second channel, wherein a first image signal and a second image signal are respectively transmitted to the transmitting system from the first channel and the second channel; a controlling device to control the tuner for channel conversion according to the channel conversion request, stopping transmission of the first image signal and transmitting the preset image signal instead, and starting transmission of the second image signal after stopping transmission of the preset image signal; and a storage device for storing the preset image signal. Examiner respectfully disagrees.

Applicant states CATV converter 12 is not a transmitting system. Examiner respectfully disagrees. CATV converter 12 is responsible for transmitting television signals and zapping time information to the television 14 via cable interface 34.

Therefore, CATV converter 12 is a transmitting system. Therefor, Examiner respectfully disagrees with Applicant's statement that the receiver, tuner and storage device are not contained in a transmitting system.

**As to claim 2** in response to Applicant's argument on page 19, paragraph 5 that Tsuria does not disclose or suggest determining whether the transmitting system is ready for the channel conversion from the first channel to the second channel, Examiner respectfully disagrees.

Tsuria discloses that the zapping time information is displayed **until** the second channel is tuned. This implies that the system must determine when the second channel is tuned before it begins to display it, thereby determining whether the second channel is ready for display and the system is ready for channel conversion. Therefore, a determination is made before the display of the zapping time information ceases and the transmission of the second image signal begins.

In response to Applicant's argument on page 20 paragraph 2 that Tsuria does not disclose or suggest if the transmitting system is ready for the channel conversion, stopping transmission of the preset image signal, and starting transmission of the second image signal, Examiner respectfully disagrees. Tsuria discloses ceasing transmission of the zapping time information **when** the second channel is tuned (i.e. as a result of determining that the second channel is ready), at which point the image signal corresponding to the second channel is displayed (col. 4 lines 42-51).

**As to claim 3** in response to Applicant's argument on page 21 paragraph 4 that neither Tsuria nor Suh teaches, discloses or suggests converting the channel from the first channel to the second channel after the second image is stable, Examiner respectfully disagrees.

Tsuria teaches switching to a second channel **when** the second channel is tuned (col. 4 lines 42-51), and Suh teaches a method of determining when an image stream is stable (claim 2). As stated in the Office Action dated 02/11/2008, "it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the image stability detection scheme disclose by Suh with the system of Tsuria. The rationale for this combination would have been to determine exactly when the television was properly tuned to the second channel in order to minimize the time that predetermined information was displayed." Therefore, the **combination** of Tsuria and Suh disclose converting the channel from the first channel to the second channel after the second image is stable.

**As to claim 12** in response to Applicant's argument on page 22 paragraph 3 that neither Tsuria or Suh teaches, discloses or suggests the channel is converted from the first channel to the second channel after the second image signal is stable, Examiner respectfully disagrees. See similar reasoning above in response to arguments regarding claim 3.

**As to claim 4** in response to Applicant's argument on page 23 paragraph 2 that neither Tsuria nor Suh teaches, discloses or suggests converting the channel from the first channel to the second channel after the deviation is less than a predetermined value, Examiner respectfully disagrees.

Tsuria teaches switching to a second channel **when** the second channel is tuned (col. 4 lines 42-51), and Suh teaches a method of determining that an image stream is stable when a deviation is less than a predetermined value (claim 2). As stated in the Office Action dated 02/11/2008, "it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the image stability detection scheme disclose by Suh with the system of Tsuria. The rationale for this combination would have been to determine exactly when the television was properly tuned to the second channel in order to minimize the time that predetermined information was displayed." Therefore, the **combination** of Tsuria and Suh disclose converting the channel from the first channel to the second channel after the second image is stable, as determined by deviation values disclosed by Suh.

**As to claim 13** in response to Applicant's argument on page 24 paragraph 2 that neither Tsuria or Suh teaches, discloses or suggests the channel is converted from the first channel to the second channel after the deviation is less than a predetermined value, Examiner respectfully disagrees. See similar reasoning above in response to arguments regarding claim 4.



***Claim Rejections - 35 USC § 102***

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-2, and 5 are rejected under 35 U.S.C. 102(b) as being unpatentable over Tsuria, US Patent No. 5,786,845.

**As to claim 1**, Tsuria discloses an image processing method able to maintain the image display quality of signals transmitted from a transmitting system during a channel conversion from a first channel to a second channel, wherein a first image signal and a second image signal are respectively transmitted to the transmitting system from the first channel and the second channel, comprising the steps of: (A) sending a channel conversion request to the transmitting system (col. 2 lines 9-11); (B) controlling the transmitting system to stop transmitting the first image signal and start to transmit a preset image signal (col. 2 lines 11-18; col. 4 lines 43-51 – predetermined information is stored and later displayed during channel changes); and (C) stopping transmission of the preset image signal, and starting transmission of the second image signal (col. 1 lines 44-52; col. 4 lines 43-51).

**As to claim 2**, Tsuria discloses the image processing method as claimed in claim 1, wherein the step (C) further comprises the steps of: (D) determining whether the transmitting system is ready for the channel conversion from the first channel to the second channel (col. 4 lines 43-51 – predetermined information is displayed until the

television is tuned to the second channel); and (E) if the transmitting system is ready for the channel conversion, stopping transmission of the preset image signal, and starting transmission of the second image signal (col. 4 lines 43-51).

**As to claim 5**, Tsuria discloses the image processing method as claimed in claim 2, wherein the step (D) further comprises the step of: (H) converting the channel from the first channel to the second channel after transmitting the preset image signal for a period of time (col. 4 lines 43-51).

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 3-4, 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuria, US Patent No. 5,786,845, in view of Suh, US Patent No. 7,257,261.

**As to claims 3**, Suh discloses an image processing method consisting of detecting the stability of an image signal by a detector (claim 2).

**As to claim 4**, Suh discloses comparing the deviation among a plurality of continuous images and determining that the video stream is stable when the deviation is less than a predetermine value (claim 2).

**As to claim 12**, Suh discloses an image processing method consisting of detecting the stability of an image signal by a detector (claim 2).

**As to claim 13**, Suh discloses comparing the deviation among a plurality of continuous images and determining that the video stream is stable when the deviation is less than a predetermine value (claim 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the image stability detection scheme disclose by Suh with the system of Tsuria. The rationale for this combination would have been to determine exactly when the television was properly tuned to the second channel in order to minimize the time that predetermined information was displayed. All the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

4. Claims 6-7, 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuria, US Patent No. 5,786,845, in view of Masaike, US Patent No. 6,091,459.

**As to claim 6**, Masaike discloses a background color being displayed when no video signal is supplied (col. 1 lines 4-17).

**As to claim 7**, Masaike discloses a system capable of displaying text information on a television screen when no video signal is supplied (col. 1 lines 4-17 – OSD controls background color and additional text information to be displayed).

**As to claim 15**, Masaike discloses a system which displays a background color when no video signal is supplied (col. 1 lines 4-17).

**As to claim 16**, Masaike discloses a system capable of displaying text information on a television screen when no video signal is supplied (col. 1 lines 4-17 – OSD controls background color and additional text information to be displayed).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Masaike as applied to claims 6-7, 15-16, with that of Tsuria. The rationale for this combination would have been to have a default screen to display during channel changes when no advertisement material was available. All the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

5. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuria, US Patent No. 5,786,845 in view of Evoy et al. US Pub. No.: 2003/0053662.

**As to claim 8**, Evoy et al. discloses the steps of: digitizing the image signal and compressing the digitized first image signal with a predetermined compression method by the transmitting system; and digitizing the second image signal and compressing the digitized second image signal with a predetermined compression method by the transmitting system (Paragraph 18).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the compression system disclosed by Evoy et al. with the teachings of Tsuria. The rationale would have been to use the scheme disclosed by Tsuria in a wireless environment. All the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

**As to claim 9**, Evoy et al. discloses the image processing method as claimed in claim 8, wherein the predetermined compression method involves a "group of pictures" technique (Paragraph 18 – MPEG4 is a group of pictures technique).

**As to claim 10**, Evoy et al. discloses the image processing method as claimed in claim 8, wherein the predetermined compression method is MPEG4 developed by the MEPEG (Moving Picture Experts Group) (Paragraph 18).

6. Claims 11, 21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuria US Patent No. 5,786,845 in view of Applicant's Admitted Prior Art (AAPA).

**As to claim 11**, Tsuria discloses a transmitting system, comprising:

a receiving module for receiving a channel conversion request (col. 2 lines 45-52); a tuner for channel conversion from the first channel to the second channel, wherein the first image signal and the second image signal are respectively transmitted to the transmitting system from the first channel and the second channel (Fig. 1 r.n. 19; col. 2 lines 61-67);

a controlling device to control the tuner for channel conversion according to the channel conversion request, stopping transmission of the first image signal and transmitting the preset image signal instead, and starting transmission of the second image signal after stopping transmission of the preset image signal (col. 3 lines 20-26; col. 3 lines 60-65); and

a storage device for storing the preset image signal (Fig 1 r.n. 30; col. 3 lines 60-61).

Tsuria fails to disclose an image encoding device for compressing a first image signal of a first channel and a second image signal of a second channel by a predetermined compression method, wherein the compressed first image signal and the compressed second image signal are selectively transmitted by the transmitting system; and that the signals transmitted to the television are compressed image signals.

However, AAPA discloses an image encoding device for compressing an image signal of a channel by a predetermined compression method and transmitting the compressed image signal over an antenna (Page 2 lines 1-7; Figs. 1a and 1b).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Tsuria with the teachings of AAPA by compressing

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and transmitting the image signals. It also would have been obvious to one of ordinary skill in the art that this would entail compressing a first and a second image signal when a viewer changes from one channel to another. The rationale for this combination would have been to transmit signals wirelessly from a television receiver to a television set. All the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

**As to claim 21** the combined system of Tsuria and AAPA disclose the transmitting system as claimed in claim 11, wherein the receiving module receives the channel conversion request wirelessly (AAPA Page 1 lines 25-27; page 2 lines 11-19).

**As to claim 23** the combined system of Tsuria and AAPA disclose the transmitting system as claimed in claim 11, wherein the image encoding device stops compressing the digitized first image when stopping transmission of the first image signals (AAPA Page 1 line 25 – Page 2 line 7; Figs. 1a and 1b – one of ordinary skill in the art would readily recognize that the signal being digitized, compressed and transmitted in AAPA is the signal to which tuner 114 is tuned. Thus, when a channel change occurs and the first image signal is no longer transmitted, the tuner 114 no longer digitizes or compresses the first image signal).

7. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuria in view of AAPA as applied to claim 11 above, and further in view of Evoy et al. US Pub. No.: 2003/0053662.

**As to claim 17**, the combined system of Tsuria and AAPA discloses an analog-digital converter for digitizing an image signal (AAPA Page 2 lines 1-7; Fig. 1b); an image encoding device for compressing the digitized first image signal and the second image signal to the compressed first image signal and the compressed second image signal (AAPA Page 2 lines 1-7; Figs. 1a and 1b).

**As to claim 18**, Evoy et al. disclose the transmitting system as claimed in claim 17, wherein the predetermined compression method involves a "group of pictures" technique (Paragraph 18 – MPEG4 is a group of pictures technique).

**As to claim 19**, Evoy et al. disclose the transmitting system as claimed in claim 17, wherein the predetermined compression method is MPEG4 developed by the MPEG (Moving Picture Experts Group) (Paragraph 18).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the compression system disclosed by Evoy et al., as applied to claims 18-19, with the teachings of Tsuria and AAPA. The rationale would have been to use the scheme disclosed by Tsuria in a wireless environment. All the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions,



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and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

8. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuria, US Patent No. 5,786,845 in view of Fujii, Japanese Patent No. JP361035023A.

**As to claim 14**, Fujii discloses a timer for timing a period of time after starting transmitting the preset image signal, and the channel is converted from the first channel to the second channel after the period of time (Abstract – the screen is blanked until the reception of the next channel is made stable; Fig. 5 – S9 is the step of waiting 1 second (or any given period of time) after the channel change operation to display the second channel).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Fujii and Tsuria. Tsuria states that "scrolling through channels takes a certain amount of time, typically of the order of 1 second". The rationale for the combination would have been to provide timer circuitry to accurately count this 1 second, which Tsuria implies but does not specifically state. All the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

2. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuria US Patent No. 5,786,845 in view of Applicant's Admitted Prior Art (AAPA).

**As to claim 20** Tsuria fails to disclose the image processing method as claimed in claim 1, wherein the step (A) further comprises sending the channel conversion request to the transmitting system wirelessly.

However, AAPA discloses sending a channel conversion request to a transmitting system wirelessly (Page 1 lines 25-27; page 2 lines 11-19).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Tsuria and AAPA. The rationale for this combination would have been to allow for the remote control disclosed by Tsuria to function wirelessly, at a distance.

3. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuria in view of Evoy et al. as applied to claim 8 above, and further in view of Applicant's Admitted Prior Art (AAPA).

**As to claim 22** The combined system of Tsuria and Evoy fail to disclose the image processing method as claimed in claim 8, further comprising stopping compressing the digitized first image signal when stopping transmitting the first image.

However, AAPA discloses that the image encoding device stops compressing the digitized first image when stopping transmission of the first image signals (AAPA Page 1 line 25 – Page 2 line 7; Figs. 1a and 1b – one of ordinary skill in the art would readily recognize that the signal being digitized, compressed and transmitted in AAPA is the

signal to which tuner 114 is tuned. Thus, when a channel change occurs and the first image signal is no longer transmitted, the tuner 114 no longer digitizes or compresses the first image signal).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system of Tsuria and Evoy with the teachings of AAPA. The rationale for this modification would have been to begin compressing the second image signal after a channel change request.

### ***Conclusion***

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT HANCE whose telephone number is (571)270-5319. The examiner can normally be reached on M-F 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Grant can be reached on (571)272-7294. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ROBERT HANCE  
Examiner  
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